<110> Vogel, Bernard
Schouten, Govert J.
Bout, Abraham

<120> Means and Methods for Fibroblast-Like or Macrophage-Like Cell Transduction

<130> 2183-3982.2US

<140> 09/517,898

<141> 2000-03-03

<150> 60/122,732

<151> 1999-03-03

<160> 39

<170> PatentIn version 3.3

<210> 1
<211> 23
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 1
aattgtctta attaaccgct taa 23

<210> 2
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 2
aattgtctta attaaccgc 19

<210> 3
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 3
aattgcggtt aattaagac 19

<210> 4
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 4
gggggatccg aacttgttta ttgcagc 27

<210> 5
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 5
gggagatcta gacatgataa gatac 25

<210> 6
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 6
gggagatctg tactgaaatg tgtgggc 27

<210> 7
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 7
ggaggctgca gtctccaacg gcgt 24

<210> 8
<211> 47
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 8
ctgtacgtac cagtgcactg gcctaggcat ggaaaaatac ataactg 47

<210> 9
<211> 64
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 9
gcggatcctt cgaaccatgg taagcttggt accgctagcg ttaaccgggc gactcagtca 60

atcg 64

<210> 10
<211> 28
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 10
gcgccaccat gggcagagcg atggtggc 28

<210> 11
<211> 47
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 11
ctgtacgtac cagtgcactg gcctaggcat ggaaaaatac ataactg 47

<210> 12
<211> 64
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 12
gcggatcctt cgaaccatgg taagcttggt accgctagcg ttaaccgggc gactcagtca 60

atcg 64

<210> 13
<211> 50
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 13
gttagatcta agcttgtcga catcgatcta ctaacagtag agatgtagaa 50

<210> 14
<211> 47
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer HSA-2

<400> 14

ctgtacgtac cagtgcactg gcctaggcat ggaaaaatac ataactg 47

<210> 15
<211> 64
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer LTR-2

<400> 15
gcggatcctt cgaaccatgg taagcttggt accgctagcg ttaaccgggc gactcagtca 60

atcg 64

<210> 16
<211> 10
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer

<400> 16
ttaagtcgac 10

<210> 17
<211> 32
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer

<400> 17
ggggtggcca gggtacctct aggcttttgc aa 32

<210> 18
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer

<400> 18
gggggggatcc ataaacaagt tcagaatcc 29

<210> 19
<211> 35
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 19

cccgtgtatc catatgatgc agacaacgac cgacc 35

<210> 20
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 20
cccgtctacc catatggcta cgcgcgg 27

<210> 21
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 21
cckgtstacc catatgaaga tgaaagc 27

<210> 22
<211> 31
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 22
cccgtctacc catatgacac ctyctcaact c 31

<210> 23
<211> 36
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 23
cccgtttacc catatgaccc atttgacaca tcagac 36

<210> 24
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 24
ccgatgcatt tattgttggg ctatatagga 30

<210> 25
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 25
ccgatgcatt yattcttggg cratatagga 30

<210> 26
<211> 36
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 26
ccgatgcatt tattcttggg raatgtawga aaagga 36

<210> 27
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 27
ccgatgcatt cagtcatctt ctctgatata 30

<210> 28
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 28
ccgatgcatt tattgttcag ttatgtagca 30

<210> 29
<211> 30
<212> DNA
<213> Artificial sequence

<220>

<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 29
gccatgcatt tattgttctg ttacataaga 30

<210> 30
<211> 37
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 30
ccgttaatta agcccttatt gttctgttac ataagaa 37

<210> 31
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized oligonucleotide for amplification of DNA encoding fiber protein derived from adenovirus serotype

<400> 31
ccgatgcatt cagtcatcyt ctwtaatata 30

<210> 32
<211> 1068
<212> DNA
<213> Artificial sequence

<220>
<223> DNA encoding Adenovirus Ad5/fib16 chimeric fiber

<400> 32
atgaagcgcg caagaccgtc tgaagatacc ttcaaccccg tgtatccata tgaagatgaa 60

agcagctcac aacacccctt tataaaccct ggtttcattt cctcaaatgg ttttgcacaa 120

agcccagatg gagttctaac tcttaaatgt gttaatccac tcactaccgc cagcggaccc 180

ctccaactta aagttggaag cagtcttaca gtagatacta tcgatgggtc tttggaggaa 240

aatataactg ccgaagcgcc actcactaaa ctaaccactc cataggttta ttaataggat 300

ctggcttgca aacaaaggat gataaacttt gtttatcgct gggagatggg ttggtaacaa 360

aggatgataa actatgttta tcgctgggag atgggttaat aacaaaaaat gatgtactat 420

gtgccaaact aggacatggc cttgtgtttg actcttccaa tgctatcacc atagaaaaca 480

acaccttgtg gacaggcgca aaaccaagcg ccaactgtgt aattaaagag ggagaagatt 540

ccccagactg taagctcact ttagttctag tgaagaatgg aggactgata aatggataca 600

taacattaat gggagcctca gaatatacta acaccttgtt taaaacaatc aagttacaat 660

cgatgtaaac ctcgcatttg ataatactgg ccaaattatt acttacctat catcccttaa 720

aagtaacctg aactttaaag acaaccaaaa catggctact ggaaccataa ccagtgccaa 780

aggcttcatg cccagcacca ccgcctatcc atttataaca tacgccactg agaccctaaa 840

tgaagattac atttatggag agtgttacta caaatctacc aatggaactc tctttccact 900

aaaagttact gtcacactaa acagacgtat gttagcttct ggaatggcct atgctatgat 960

ttttcatggt ctctaaatgc agaggaagcc ccggaaacta ccgaagtcac tctcattacc 1020

tccccccttct ttttttctta tatcagagaa gatgactgaa tgcattag 1068

<210> 33
<211> 1062
<212> DNA
<213> Adenovirus 16

<400> 33
atggccaaac gagctcggct aagcagctcc ttcaatccgg tctaccccta tgaagatgaa 60

agcagctcac aacacccctt tataaaccct ggtttcattt cctcaaatgg ttttgcacaa 120

agcccagatg gagttctaac tcttaaatgt gttaatccac tcactaccgc cagcggaccc 180

ctccaactta aagttggaag cagtcttaca gtagatacta tcgatgggtc tttggaggaa 240

aatataactg ccgcagcgcc actcactaaa actaaccact ccataggttt attaatagga 300

tctggcttgc aaacaaagga tgataaactt tgtttatcgc tgggagatgg gttggtaaca 360

aaggatgata aactatgttt atcgctggga gatgggttaa taacaaaaaa tgatgtacta 420

tgtgccaaac taggacatgg ccttgtgttt gactcttcca atgctatcac catagaaaac 480

aacaccttgt ggacaggcgc aaaaccaagc gccaactgtg taattaaaga gggagaagat 540

tccccagact gtaagctcac tttagttcta gtgaagaatg gaggactgat aaatggatac 600

ataacattaa tgggagcctc agaatatact aacaccttgt ttaaaaacaa tcaagttaca 660

atcgatgtaa acctcgcatt tgataatact ggccaaatta ttacttacct atcatccctt 720

aaaagtaacc tgaactttaa agacaaccaa aacatggcta ctggaaccat aaccagtgcc 780

aaaggcttca tgcccagcac caccgcctat ccatttataa catacgccac tgagacccta 840

aatgaagatt acatttatgg agagtgttac tacaaatcta ccaatggaac tctctttcca 900

ctaaaagtta ctgtcacact aaacagacgt atgttagctt ctggaatggc ctatgctatg 960

aatttttcat ggtctctaaa tgcagaggaa gccccggaaa ctaccgaagt cactctcatt 1020

acctcccccct tctttttttc ttatatcaga gaagatgact ga 1062

<210> 34
<211> 353
<212> PRT
<213> Artificial sequence

<220>
<223> Chimeric Ad5/Fib16 protein

<400> 34

```
Met Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro
1               5                  10                  15

Tyr Glu Asp Glu Ser Ser Ser Gln His Pro Phe Ile Asn Pro Gly Phe
            20                  25                  30

Ile Ser Ser Asn Gly Phe Ala Gln Ser Pro Asp Gly Val Leu Thr Leu
        35                  40                  45

Lys Cys Val Asn Pro Leu Thr Thr Ala Ser Gly Pro Leu Gln Leu Lys
    50                  55                  60

Val Gly Ser Ser Leu Thr Val Asp Thr Ile Asp Gly Ser Leu Glu Glu
65                  70                  75                  80

Asn Ile Thr Ala Ala Ala Pro Leu Thr Lys Thr Asn His Ser Ile Gly
                85                  90                  95

Leu Leu Ile Gly Ser Gly Leu Gln Thr Lys Asp Asp Lys Leu Cys Leu
            100                 105                 110

Ser Leu Glu Asp Gly Leu Val Thr Lys Asp Asp Lys Leu Cys Leu Ser
        115                 120                 125

Leu Gly Asp Gly Leu Ile Thr Lys Asn Asp Val Leu Cys Ala Lys Leu
    130                 135                 140

Gly His Gly Leu Val Phe Asp Ser Ser Asn Ala Ile Thr Ile Glu Asn
145                 150                 155                 160

Asn Thr Leu Trp Thr Gly Ala Lys Pro Ser Ala Asn Cys Val Ile Lys
                165                 170                 175

Glu Gly Glu Asp Ser Pro Asp Cys Lys Leu Thr Leu Val Leu Val Lys
            180                 185                 190

Asn Gly Gly Leu Ile Asn Gly Tyr Ile Thr Leu Met Gly Ala Ser Glu
        195                 200                 205

Tyr Thr Asn Thr Leu Phe Lys Asn Asn Gln Val Thr Ile Asp Val Asn
    210                 215                 220

Leu Ala Phe Asp Asn Thr Gly Gln Ile Ile Thr Tyr Leu Ser Ser Leu
```

225 230 235 240

Lys Ser Asn Leu Asn Phe Lys Asp Asn Gln Asn Met Ala Thr Gly Thr
245 250 255

Ile Thr Ser Ala Lys Gly Phe Met Pro Ser Thr Thr Ala Tyr Pro Phe
260 265 270

Ile Thr Tyr Ala Thr Glu Thr Leu Asn Glu Asp Tyr Ile Tyr Gly Glu
275 280 285

Cys Tyr Tyr Lys Ser Thr Asn Gly Thr Leu Phe Pro Leu Lys Val Thr
290 295 300

Val Thr Leu Asn Arg Arg Met Leu Ala Ser Gly Met Ala Tyr Ala Met
305 310 315 320

Asn Phe Ser Trp Ser Leu Asn Ala Glu Glu Ala Pro Glu Thr Thr Glu
325 330 335

Val Thr Leu Ile Thr Ser Pro Phe Phe Phe Ser Tyr Ile Arg Glu Asp
340 345 350

Asp

<210> 35
<211> 353
<212> PRT
<213> Adenovirus Ad16

<400> 35

Met Ala Lys Arg Ala Arg Leu Ser Ser Ser Phe Asn Pro Val Tyr Pro
1 5 10 15

Tyr Glu Asp Glu Ser Ser Ser Gln His Pro Phe Ile Asn Pro Gly Phe
20 25 30

Ile Ser Ser Asn Gly Phe Ala Gln Ser Pro Asp Gly Val Leu Thr Leu
35 40 45

Lys Cys Val Asn Pro Leu Thr Thr Ala Ser Gly Pro Leu Gln Leu Lys
50 55 60

Val Gly Ser Ser Leu Thr Val Asp Thr Ile Asp Gly Ser Leu Glu Glu
65 70 75 80

Asn Ile Thr Ala Ala Ala Pro Leu Thr Lys Thr Asn His Ser Ile Gly

85 90 95

Leu Leu Ile Gly Ser Gly Leu Gln Thr Lys Asp Asp Lys Leu Cys Leu
100 105 110

Ser Leu Gly Asp Gly Leu Val Thr Lys Asp Asp Lys Leu Cys Leu Ser
115 120 125

Leu Gly Asp Gly Leu Ile Thr Lys Asn Asp Val Leu Cys Ala Lys Leu
130 135 140

Gly His Gly Leu Val Phe Asp Ser Ser Asn Ala Ile Thr Ile Glu Asn
145 150 155 160

Asn Thr Leu Trp Thr Gly Ala Lys Pro Ser Ala Asn Cys Val Ile Lys
165 170 175

Glu Gly Glu Asp Ser Pro Asp Cys Lys Leu Thr Leu Val Leu Val Lys
180 185 190

Asn Gly Gly Leu Ile Asn Gly Tyr Ile Thr Leu Met Gly Ala Ser Glu
195 200 205

Tyr Thr Asn Thr Leu Phe Lys Asn Asn Gln Val Thr Ile Asp Val Asn
210 215 220

Leu Ala Phe Asp Asn Thr Gly Gln Ile Ile Thr Tyr Leu Ser Ser Leu
225 230 235 240

Lys Ser Asn Leu Asn Phe Lys Asp Asn Gln Asn Met Ala Thr Gly Thr
245 250 255

Ile Thr Ser Ala Lys Gly Phe Met Pro Ser Thr Thr Ala Tyr Pro Phe
260 265 270

Ile Thr Tyr Ala Thr Glu Thr Leu Asn Glu Asp Tyr Ile Tyr Gly Glu
275 280 285

Cys Tyr Tyr Lys Ser Thr Asn Gly Thr Leu Phe Pro Leu Lys Val Thr
290 295 300

Val Thr Leu Asn Arg Arg Met Leu Ala Ser Gly Met Ala Tyr Ala Met
305 310 315 320

Asn Phe Ser Trp Ser Leu Asn Ala Glu Glu Ala Pro Glu Thr Thr Glu
325 330 335

Val Thr Leu Ile Thr Ser Pro Phe Phe Phe Ser Tyr Ile Arg Glu Asp
340 345 350

Asp

<210> 36
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer NY-UP

<400> 36
cgacatatgt agatgcatta gtttgtgtta tgtttcaacg tg 42

<210> 37
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Chemically synthesized Primer NY-DOWN

<400> 37
ggagaccact gccatgttg 19

<210> 38
<211> 1103
<212> DNA
<213> Artificial sequence

<220>
<223> DNA encoding Adenovirus Ad5/fib16 chimeric fiber

<400> 38
atgaagcgcg caagaccgtc tgaagatacc ttcaaccccg tgtatccata tgaagatgaa 60

agcagctcac aacacccctt tataaaccct ggtttcattt cctcaaatgg ttttgcacaa 120

agcccagatg gagttctaac tcttaaatgt gttaatccac tcactaccgc cagcggaccc 180

ctccaactta aagttggaag cagtcttaca gtagatacta tcgatgggtc tttggaggaa 240

aatataactg ccgaagcgcc actcactaaa ctaaccactc cataggttta ttaataggat 300

ctggcttgca aacaaaggat gataaacttt gtttatcgct gggagatggg ttggtaacaa 360

aggatgataa actatgttta tcgctgggag atgggttaat aacaaaaaat gatgtactat 420

gtgccaaact aggacatggc cttgtgtttg actcttccaa tgctatcacc atagaaaaca 480

acaccttgtg gacaggcgca aaaccaagcg ccaactgtgt aattaaagag ggagaagatt 540

ccccagactg taagctcact ttagttctag tgaagaatgg aggactgata aatggataca 600

taacattaat gggagcctca gaatatacta acaccttgtt taaaacaatc aagttacaat 660

cgatgtaaac ctcgcatttg ataatactgg ccaaattatt acttacctat catcccttaa 720

aagtaacctg aactttaaag acaaccaaaa catggctact ggaaccataa ccagtgccaa 780

aggcttcatg cccagcacca ccgcctatcc atttataaca tacgccactg agaccctaaa 840

tgaagattac atttatggag agtgttacta caaatctacc aatggaactc tctttccact 900

aaaagttact gtcacactaa acagacgtat gttagcttct ggaatggcct atgctatgat 960

ttttcatggt ctctaaatgc agaggaagcc ccggaaacta ccgaagtcac tctcattacc 1020

tccccccttct ttttttctta tatcagagaa gatgactgaa tgcattagtt tgtgttatgt 1080

ttcaacgtgt ttattttcaa ttg 1103

<210> 39
<211> 6
<212> PRT
<213> Adenovirus

<400> 39
Phe Asn Pro Val Tyr Pro
1 5